Exhibit B, WorldCom Comments

T. Randolph Beard, PH.D., "Telemarketing and Competition: **An** Economic Analysis of "Do Not Call" Regulations" (March 2002)

Telemarketing and Competition:
An Economic Analysis of "Do Not Call" Regulations

T. RANDOLPH BEARD, PH.D.,
Associate Professor of Economics
Department of Economics
Auburn University
Auburn. Alabama 36849

March 2002

Telemarketing and Competition:

An Economic Analysis of "Do Not Call" Regulations

Executive Summary

The U.S. Federal Trade commission is currently evaluating introduction of a national "Do Not Call" mechanism to limit telemarketing communications. Similar proposals have already been implemented by seventeen US. states, although participation rates vary widely. The conventional economic argument used in favor of limiting telephone sales calls is based on the belief that a meaningful "externality" is created by such calls. By limiting calls, it is thought that these external costs could be reduced.

This report examines a potential effect of "Do Not Call" regulation. For some industries, telemarketing is a primary means of price competition. In telecommunications, for example, the bulk of all customers who switch carriers do *so* in response to telephone solicitations. Thus, any policy that limits such calls will have the unintended consequence of raising the costs incurred by firms in making attractive offers to rival firms' customers. This cost increase, in turn, reduces the incentives firms have to "guard" their initial customers by moderating prices. Several simple economic models are developed which illustrate this basic phenomenon. It is shown that policies which increase the effective costs of recruiting other firms' customers can reasonably be expected to result in general increases in prices and a reduction in the vigor of price competition.

Thus, it is urged that any implementation of a "Do Not Call" regulation be predicated on a careful evaluation of possible price consequences of such a policy. Even if a reduction in sales calls reduces consumer irritation, and this effect can be valued, the resulting benefits must then be weighed against the negative consequences of potential price rises.

T. RANDOLPH **BEARD,** PH.D.,
Associate Professor of Economics
Department of Economics
Auburn University
Auburn, Alabama 36849
rbeard@business.auburn.edu.

Telemarketing and Competition: An Economic Analysis of "Do Not Call" Regulations

T. RANDOLPH BEARD, PH.D., *Associate Professor of Economics, Department of Economics, Auburn University, Auburn, Alabama, 36849, rbeard@business.auburn.edu.*

Abstract. This report examines a potential effect of "Do Not Call" regulations, which are aimed at attenuating the use of telemarketing as a mode of customer acquisition. For some industries, telemarketing is a primary means of price competition. In telecommunications, for example, the bulk of customer migration is in response to telephone solicitations. Thus, any policy that limits telemarketing will have the unintended consequence of raising the costs to firms of attracting rival firms' customers. This cost increase, in turn, reduces incentives to "guard" their existing customers by moderating prices. In this paper, several simple economic models are developed which illustrate this basic phenomenon. It is shown that policies that increase the effective costs of recruiting customers from rival firms can be expected to result in general increases in prices and a reduction in the vigor of price competition.

I. Introduction

The use of telemarketing in the U.S. has increased substantially in recent years. Belch and Belch (2000, p. 485) report that telemarketing produced sales of almost $230 billion to consumers in 1999, and over 5 million workers had jobs tied to telemarketing. Although much telemarketing involves business-to-business ("B2B") sales, the growth in direct calling of consumers has largely paralleled the general growth in all forms of direct marketing.

As telemarketing has expanded, so have initiatives to regulate or restrict its use. While abuses by disreputable firms operating illegally have triggered several regulatory initiatives (such as the FTC's Telemarketing Sales Rule, or TSR of 1995), momentum now exists to institute restrictions on the activities of legitimate firms. In particular, the FTC is currently considering implementation of a national "No Call" mechanism, an initiative that could supplant some state-level programs designed along similar lines.] Under such a scheme, consumers

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could "opt out" of the pool of potential telemarketing acquisitions by registering in a national database, thereby limiting the number of (unsolicited) sales calls they receive.

The political impetus for such regulations is readily apparent: many consumers do not wish to receive sales calls, particularly at inconvenient moments. However, there is also an *economic* aspect to the debate. Although economists have long recognized the potentially pro-competitive function of advertising, it is widely believed that unsolicited sales calls impose costs on consumers in an "involuntary" way. This logic identifies unwanted calls as the source of a *negative externality*, an economic concept that describes costs imposed on one party by the actions of another when those costs are not mediated through the price system.2 Often called "spillovers", externalities create inefficiencies and welfare losses in markets, and serve as a rationalization for certain types of government intervention. As applied to telemarketing, the externality argument suggests that certain limitations on calls can be appropriate, and that, in the absence of such regulation, too many such calls would be made.

Yet, telemarketing is not only an externality: it is also a widespread form of advertising. Economics also has long recognized that advertising plays a significant role in the competitive process, and that restrictions on advertising actually can have bad consequences for society in some cases. Commenting on the famous study of advertising bans in optometry by Benham (1972), Ekelund and Tollison (1997, p. 269) note that, "The prevention of advertising appears to have made prices higher than they would have been had advertising been allowed in the market." Of course, a ban on telemarketing is *not* a blanket prohibition on advertising. Thus, any useful evaluation of the actual social consequences of telemarketing restrictions should compare the *benefits* arising from reducing the "unwanted call externality", with the potential *costs* arising from reduced competition (i.e., higher prices).

This report provides a framework for evaluating the probable impacts on consumers of an effective "do not call" regulation. While it appears that there is insufficient data to reach a conclusion on this issue at this time, any such analysis must include a careful evaluation of the factors described and analyzed in this report. A number of potentially important preliminary findings can be obtained from a straightforward theoretical exercise. The two most important are:

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2 See Salanie (2000), Ch. 6, for a detailed discussion

1. An increase in the costs of contacting a rival's customers will lead to an increase in prices generally;

2. It is possible that the harm to consumers from the price increases will outweigh any benefits they might obtain from reduced telemarketing. Further, it is not true that an increase in the cost of telemarketing will reduce total advertising.

These findings do not depend on any particularly complex or convoluted theoretical model. Rather, they arise naturally from a relatively simple set of propositions. Thus in the absence of further empirical evidence, great caution should attend any government sponsored intervention in this area.

This report is divided into five sections plus a technical appendix. Section II provides background information and a brief literature survey. Section III presents a simple model of direct advertising, and illustrates the basic mechanism by which institution of limits on telemarketing can raise prices and harm consumers. Section IV considers some extensions of this analysis, while Section V offers a short summary and conclusion. A technical appendix provides mathematical details.

II. Background

The FTC's current evaluation of new restrictions on telemarketing mirrors a recent trend among U.S. states to introduce "do not call" programs. It appears that seventeen states (AK, AL, AR, CO, CT, FL, GA, ID, IN, KY, LA, MO, NY, OR, TN, TX, and WI) currently have some type of no solicitations listings, most of which were introduced since 1998. Many state programs allow consumers to sign up at no cost, but several (e.g., Arkansas and Florida) have registration charges that typically amount to $5 - $10 per year. Both sign up and renewal charges are sometimes imposed. Almost all such programs appear to allow registration via the Internet, a toll-free call, or regular mail. Many such programs exempt charitable and political calling, and Alabama and Missouri's programs exempt telephone companies.

Due to their newness, the ultimate impact of many of these programs is difficult to assess. Participation appears to be very low in those states that charge for the

service.[3] A representative program is that of Tennessee introduced in 1999, which currently enrolls around 30% of all residential lines in the state.[4] This program is funded through the sale of the "do not call" list to telemarketers, who pay $500 for it. The list is updated frequently, and fines for violations are $5000, though few firms have been subject to sanction.[5]

The proliferation of "do not call" programs indicates their popularity with the public. This popularity probably arises from two logically distinct sources. First, abuses by telemarketers operating in a fraudulent or unethical manner have soured many on telemarketing generally. Second, even when a telemarketer acts ethically and legally, some customers are annoyed by such calls, particularly when the call comes at an inconvenient time.

Since abusive and deceptive sales practices are already illegal, "do not call" initiatives presumably reflect consumer annoyance with unwanted calls, rather than an effort to prevent unlawful behavior. This phenomenon can be expressed in economic terms, and the most common economic description of this annoyance is "negative externality."[6] An externality is a real effect borne by one person, caused by the actions of another, that is not reflected in prices. For example, in the absence of pollution regulations, industrial plants may emit very large quantities of noxious gases that damage the health of people not involved in the operation. This can occur because, from the polluter's point-of-view, pollution costs do not include those costs involuntarily borne by other parties. Going further, economists show that the result of this situation is too much pollution from the social perspective.

The analogy from air pollution to unwanted telephone solicitations is apparent, though somewhat deceptive. Unlike pollution, which no one wishes to have, phone solicitations sometimes result in product sales ($230 billion in 1999), suggesting that *some* calls result in desirable reallocations of resources.

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[3] For example, Arizona began its program in 1999, requires a $5 fee, but appears to have a participation rate of about 1%. Oregon also charges ($6.50 new/$3 renewal) fees, and has participation of around 3.4% of eligible lines.

[4] This information comes from the staff of the Tennessee Regulatory Authority (TRA), Nashville, Tenn.

[5] Ordinarily, complaints are resolved through negotiation with the TRA.

[6] There are also "positive externalities." See Salanie (2000). supra, no. 2

Nevertheless, the primary economic rationale for limiting telemarketing is that such calls create negative externalities and are oversupplied in competition.

The identification of advertising (in this case, telemarketing calls) with an externality is a new wrinkle in the ongoing analysis by economists of advertising and market performance. A vast economic literature has evolved since the pioneering analyses of Dorfman and Steiner (1952) which addresses the problems: (i) is advertising a good thing?; (ii) what is the socially optimal amount of advertising?; (iii) what role does advertising play in competition?; (iv) how does advertising, or a ban on advertising, affect prices? As in most important questions, the economics literature has produced conflicting answers to these questions.[7] However, it is fair to say that, at least in some important cases, advertising increases competition, lowers prices, and benefits the public. For example, Shepherd (1985, p. 317) remarks that "... advertising can be a powerful device by which new or small firms succeed ... Dial soap is a good example; it was Armour & Co.'s entry into the soap industry in the 1950s, by means of heavy advertising." Ireland (1987, p. 117) refers to the anticompetitive effects of many advertising bans with the comment: "These (studies) have generally concluded that prices are significantly higher when advertising is banned (see, for example, Benham, 1972 and Bonel et al., 1980)." Carlton and Perloff 2000 (p. 460) state that, "substantial empirical evidence indicates that advertising about prices can increase competition and raise welfare."

The economics literature has not declared advertising an unalloyed good, however, and many articles have examined the use of ads as barriers to entry, artificial product differentiation devices, and so on. Additionally, it is common to draw a distinction between "informative" advertising (e.g., ads indicating prices) and "persuasive" ads (which seek to alter preferences, perhaps even by misleading consumers).* In general, economists view price advertising as beneficial to consumers and oppose restrictions on it.[9]

The relevance of these considerations to telemarketing regulation is crucially dependent on the function such marketing performs. In some industries, such as telecommunications, telemarketing is a fundamental tool of competition. The

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[7] *See* Krouse (1990), Ch. 13, for an extensive review.

[8] See Shy (2995). p 283.

[9] *See* Waldham and Jensen (1998), p. 315.

majority of residential consumers learn about new competitive rates from direct calls to customers. Further, since virtually everyone is now presubscribed to some interLATA carrier, such calls by necessity *target the customers of rivals.* Finally, it appears that the offers made in these calls stress price reductions and other objective, economically–relevant factors such as free minutes and cash awards. In this case, then, telemarketing serves as a primary method of price competition. This fact raises concerns that limitations on such calls could raise prices generally.

Alternatively, it is true that some telemarketing efforts are more difficult to characterize as price competition between rivals. Calls offering products or services that consumers do not regularly purchase might fall into this category. In these cases, the effect of telemarketing on prices is somewhat more uncertain.

Economists generally have ignored these dual and sometimes conflicting properties of telemarketing. This paper serves as an initial attempt to address this void in economic research. The crucial questions for this report are:

1. How is telemarketing to be modeled?

2. How would a "do not call" ban be modeled?

3. Given (i) and (ii), would such a ban be expected to raise prices?

4. Could individuals' personal support for such a ban be inconsistent with, and detrimental to, the public interest?

The remaining sections of this report provide answers to these questions, and suggest that, at least in some industries, initiatives that raise the costs or reduce the effectiveness of direct marketing will increase prices generally, and may well harm consumers.

III. A Simple Model of Telemarketing and Prices

This section explains why, in some important cases, initiatives reducing the effectiveness (or increasing the costs) of telemarketing are likely to increase prices. This conclusion arises from recognition of the use of telemarketing as a vehicle for price competition, and does not rely on unusual or complex strategic arguments. Rather, we offer a very simple model, based on a two-stage duopoly game of price setting and telemarketing, which illustrates the intuition behind

this result. Some complications and extensions to the analyses are offered in Section IV.

Because the goal is to illustrate, as simply as possible, why limitations on telemarketing may harm society *even* when people find such calls generally annoying, the analysis **is** extremely basic. However, two critical assumptions support this investigation, and these assumptions should be emphasized since they are necessary for the results. First, we restrict our attention here to cases in which telemarketing is used (perhaps along with other media) to offer competing services to the customers of rival firms. Second, the institution of a "do not call" program is represented here as an increase in the marginal and total costs of contacting a potential customer.[10] There are several reasons for this. First, telemarketing is one of several forms of direct marketing (others include direct email, door-to-door sales, etc.), **and** is often used in combination with other types of advertising (e.g., television commercials and print ads). Thus, limitations on the use of telemarketing "change the mix" of advertising methods used. Since telemarketing is used now, the presumption must be that it is one of the more cost-effective means of customer contact and acquisition. Consequently, any limitation on the use of telemarketing (or any relatively more efficient acquisition tools) **is** presumably cost increasing, given its "revealed" effectiveness. In other words, any given level of success in customer sales will be more expensive with a ban **than** without one, other things equal.

The analysis presented here does not support imposing or extending any "do not call" restrictions to firms calling their own customers. This would not "even the playing field between incumbent firms and competitors, but rather would interfere with established business relationships and raise the cost to firms of doing business. Calls to existing customers do not constitute competitive rivalry *per se*. Customers who have explicitly indicated their interest in a firm's products by purchasing them in the past, or who otherwise have established business relationships, are qualitatively different than a "random" customer. In addition, firms have a strong incentive to avoid irritating their own customers, so unwelcome calls are unlikely to be much of a danger. (Indeed, some firms, such as credit card issuers, allow customers to opt out of such calls.) Finally, to the extent that such calls are proactive efforts to avoid losing customers, their competitive effects are desirable.

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[10] Implicit **in this assumption** is that **firms profit maximize and, as such, choose the optimal mix** of **marketing** tools **prior** to **and after the restriction.**

These issues addressed, we now turn to the model itself. While some technical issues are covered in the appendix, the simplicity of the analysis allows us to profitably include some of it here.

We make the following assumptions. First, there are two firms, **A** and B, selling very similar products. **A** large set of N consumers are initially distributed between the two sellers in numbers N_A and N_B where $N_A + N_B = N$. This distribution represents the *existing* pattern of customer relationships. For example, those N_A customers "assigned to seller **A** can be viewed as presubscribed to A s service, if **A** were a long distance provider for example.

We assume further that each customer buys one unit of service, either from their initially assigned seller (if they do not get a "better" offer from the competition), or from the competitor. (In the next section it is shown that this simplifying assumption is unnecessary.) In order to "steal" another firm's customer, a seller must: (i) effectively contact the customer, and; (ii) make an offer at a price at least 6 below that charged by the rival, where $6 \geq 0$. Thus, δ represents the fact that moving is costly, and customers resist switching suppliers unless there is a positive gain from doing so. This requirement is also consistent with the notion that sales calls are irritating and create a "negative bias" toward the offer, and that firm services may exhibit slight differences that are reflected in the "initial" distribution of customers.

We assume further that each unit of service costs each firm c to provide (i.e., c is marginal cost). While we consider a generalization **of** this in the next section, we focus here on pricing *net* of this cost c, so for now we take $c = 0$. Thus, we interpret the resulting prices as mark-ups over unit costs.

Our analysis has the following structure. First, consistent with the traditional game theory assumption, there is complete information (i.e. both firms know the description provided above and both know the other knows it, and so on). Second, the firms initially announce their service prices P_A and P_B simultaneously and non-cooperatively. These prices are public knowledge among the firms. Second, given these prices, each firm can choose to solicit sales from the *other firm's* customers ("telemarketing"). Such solicitations are costly. **A** customer contacted in this way will switch only if he/she is offered service at a price at least 6 below their current price. For example, if firm **A** announces a price of P_A, and firm B contacts one of **A's** customers, then B can obtain that customer if it offers a price of not more than P_A - 6.

If S effective contacts are made (by some combination of telemarketing and other means), we assume that the cost to the contacting firm is $(S^2K/2)$, where $K > 0$ is a parameter representing the costs of making effective contacts." (This formulation is not necessary, and is adopted only for convenience: see the Appendix for a generalization.) In general, we expect a "do not call" type ban to *increase* K since, for example, compliance with the rules will raise costs, and selective opting out may imply greater effort is required to turn up a good sales prospect. When telemarketing is made less effective, the firm will substitute other means to some extent, and these other means will by definition be less effective since they were not selected in the first place.

Given any set of prices P_A and P_B, the firms simultaneously and non-cooperatively select their privately optimal levels of advertising, denoted S_A^* and S_B^*. These levels must satisfy the relationships:

$$S_A^* = (P_B - \delta)/K \tag{1a}$$

$$S_B^* = (P_A - \delta)/K \tag{1b}$$

where, by assumption, $S_A^* < N_B$ and $S_B^* < N_A$ (i.e., neither firm calls every customer of the other).

The conditions (1a,b) are intuitive. Firms recruit other firms' customers more intensely when: (i) the other firm charges higher prices; (ii) the discount 6 needed to recruit a customer is less, and (iii) the cost factor K is lower. (We assume here that $P_A - 6 > 0$ and $P_B - \delta > 0$, i.e., the margins are greater than the discount 6.)

We now turn to the issue of pricing. Recall that firms select their prices (P_A, P_B) "prior" to their efforts to capture each other's customers. By a conventional economic argument, we find that optimal equilibrium prices satisfy the conditions:

$$P_A^* = (KN_A + \delta)/2 \tag{2a}$$

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[11] This particular specification of costs exhibits diminishing marginal returns

$$P_B^* = (KN_B + \delta)/2, \tag{2b}$$

where the superscript asterisk indicates an optimal value

Several conclusions and theoretical predictions are illustrated by (2). First, firms with larger market shares charge higher prices, a consequence of the fact that having a larger "captive" customer based to start with creates an incentive to exploit this advantage with higher prices. Second, prices are higher as 6, the discount necessary to capture a customer, is higher. This is also consistent with intuition: when 6 is big, capturing a customer is less profitable, so there is less incentive to actively limit "raids" by other firms by offering lower prices to extant customers.

Our final and most significant result concerns the effect of the marketing cost index K on market prices. In particular, the higher K is, the higher prices are initial prices. This result is also easy to understand. With "presubscribed customers, there is an incentive to exploit the inelasticity of their demands by charging very high prices. However, as price is increased, the number of customers lost to "raids" by the rival firm steadily increases. Thus, a lower initial price is a form of "insurance" purchased by the firm in order to limit competitive inroads by a rival. As Krises, such threats are lessened, and the firm exploits this fact by instituting higher initial prices. When the rival firm engages in optimal "customer stealing", the target firm faces a tradeoff between increased profits through higher prices from each customer it retains, versus profits lost from customers who defect to the rival due to those same price rises.

The relevance of these results for a "do not call" initiative is apparent. Such an initiative would raise the cost of effective contacts, which is represented here by an increase in K. This, in turn, would cause prices in the market to rise. Further, although the analysis suggests that the resulting price increases will be greater for larger firms, all firms will take advantage of the ability to raise prices.

In summary, when restrictions on telemarketing raise the costs of contacting rival's customers, price competition is lessened and prices rise. This fact highlights two points. First, bans on telemarketing will not necessary reduce total advertising – it might only alter its composition toward other media.[12]

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[12] Indeed, in the simple model of this Section, S^* rises as K rises in equilibrium because prices rise enough to increase the profitability of marketing despite the increase in K.

Second, and most importantly, if the regulations reduce telemarketing, then the resultant diminution in objectionable calls must be weighed against the objectionable increase in prices. Thus, *it is not true that consumers will necessarily benefit from such a policy. After all, while some people object to sales calls, virtually everyone objects to higher prices,*

This analysis suggests that any initiative that raises acquisition costs, thereby reducing price competition in the manner outlined here, must be evaluated very carefully. The fact that many consumers support "do not call" initiatives as *individuals* does not establish that it is a good social policy. Indeed, since the experiences of a single individual cannot affect the market outcome, each consumer, on his or her own, might wish not to receive sales calls (or any other advertising, for that matter). Yet, if a public policy allows everyone to satisfy this want, an important tool of competition could be disabled, with unfortunate, if unintended, consequences.

IV. Some Complications and Extensions

One may object to the analysis of the last section on several grounds. First, it should be recognized that telemarketing is here viewed primarily as a tool for price competition, in which rivals vie to capture each other's customers. In this circumstance, any initiative that raises advertising costs is anticompetitive, regardless of its other merits.

More obviously, the material of Section III makes use of several technical assumptions that are highly unrealistic. However, this section will show that, for the most part, the basic mechanism illustrated previously does not depend on these assumptions. In particular, we will consider complications based on **(1)** more realistic demand specification; **(2)** more than two firms, and; ***(3)*** differing costs between firms.

1. DEMAND COMPLICATIONS

The basic result of the last section - that increases in the costs of capturing rival firms' customers will result in general price increases – was obtained using an extremely simple description of consumer buying behavior. We show now that this restriction is not necessary to the results.

To maintain simplicity, suppose a consumer would buy $Q = D - p$ units of the good when the effective price is p, where Q is units bought and D is an unknown number ($D > 0$). Again, we assume that a rival must offer a discount of δ in order to induce a consumer to switch. With this change in the specification of consumer demand, firms now have an incentive to lower prices in order to sell *additional* units of services or goods. We show that this complication does not in any way alter the basic conclusion of the previous section.

Again, the analysis proceeds by determining "optimal telemarketing" in the second stage first. Profit is maximized when $S_A = S_A^*$, $S_B = S_B^*$, where:

$$S_A^* = (D - (P_B - \delta))(P_B - \delta) / K \tag{3a}$$

$$S_B^* = (D - (P_A - \delta))(P_A - \delta) / K \tag{3b}$$

This finding is the generalization of that given in (1), with the added complication of downward sloping demand curves. As explained in the appendix, in any equilibrium we will have the result that higher prices by the rival will trigger greater attempts to "steal" the rival's customers.

Proceeding to the first stage, the problem at hand is to show that optimal equilibrium prices increase when K increases. In other words, we need to illustrate that restrictions on telemarketing that increase the costs of effectively contacting others' customers will result in increased prices for everyone. Since the appendix provides a formal proof, we limit the discussion here to an intuitive explanation. We obtain the desired result whenever the effect of a price increase by firm A, say, on A's profit, increases when K increases. In other words, price increases by A should have a more favorable impact on profits when K is high than when K is low. This is indeed the case. The reason is that, as K increases, the immediate effect is to make capturing the other firm's customers a more costly proposition. This means that the target firm can take advantage of this cost increase by raising prices. Recall that, for any firm, profits are maximized when the firm raises prices up to the point where any additional increase would cause more profits to be lost from lost customers than would be created by higher prices levied on existing customers. This optimal point involves higher prices when it becomes more costly for the rival to "raid" the firm's customer base

In summary, the basic mechanism found earlier - higher advertising ("telemarketing") costs cause prices to rise - is not dependent on the demand assumption made in Section III. On reflection, it is easy to see why this should be so. Firms recognize that, the higher their prices, the greater the likelihood of losing customers to rivals. The effectiveness of this threat, however, depends on the *costs* of contacting customers and making attractive offers to them. Any increase in these costs reduces competition and raises prices.

2. MULTIPLE FIRMS

While our analyses have focused on "duopoly", i.e., on markets with two sellers, the basic logic is not in any way dependent on that restriction. It is true, however, that models with many firms are more complex, and introduce new technical issues. We briefly review these issues first, and then explain why they do not alter the conclusions established previously.

When there are many firms, each firm may try to "steal" customers from multiple other firms. Likewise, each firm faces threats from many firms. If a customer receives two (or more) offers δ below the incumbent's price, how would he/she choose? More importantly, how would firms target their customer recruitment (telemarketing) efforts between rival firms' customers?

The profit any firm earns from obtaining someone else's customer is, according to our simplest assumptions, $P_i - \delta$, where P_i is the target firm's price. Given this, firms with higher prices are more attractive targets, and one expects high priced firms to be the primary "victims" of telemarketing. This is, of course, a desirable outcome. From the analytic point-of-view, however, it **is** a difficult complication because of the abrupt effect on a firm's profits of a tiny change in its price, when by making the change, the firm moves from the highest priced to, say, the second highest priced seller in the market.

These complications do not alter the basic finding when the process of obtaining other's customers is viewed realistically. For any given firm, it is safe to say that, the higher their price, the greater the extent to which their customers obtain competing offers, and the more customers are lost. Again, the firm's problem is to set prices to equalize the profits gained by increases on existing customers, and profits retained by discouraging "raids" by competing suppliers. In this sense, whether there is one rival firm or many makes no difference. Indeed, one could regard the "other firm" in our simple model as an amalgamation of "all

other firms" from the standpoint of a single seller. As long as one accepts that (i) higher prices induce more competitive intrusions, and (ii) firms will price to equate profits gained from "unlost" customers with profits gained from not losing customers, then increases in the costs of recruiting others' customers will increase the marginal profitability of price increases. This latter effect is that which produces our primary finding.

3. COST DIFFERENCES

The analyses above uniformly assume that both firms face the same costs, both for providing service and for engaging in marketing. While firms could differ in either area, disparities in the costs of service are for more important from a policy perspective.[13] This complication can be easily analyzed using the simple framework of Section III. Now, rather than representing prices as "prices net of service cost", price measures what the consumer pays, and each firm produces service at constant per-unit costs of C_A and C_B, where $C_A \neq C_B$. Repeating the previous analysis, we obtain optimal prices of

$$P_A^* = (KN, + \delta + C_A + C_B)/2 \tag{4a}$$

$$P_B^* = (KN, + 6 + C_B + C_A)/2 \tag{4b}$$

These results parallel our previous findings. Note that a firm charges higher prices whenever: (i) its own costs are higher, or (ii) the rivals' costs are higher. This latter effect arises because, when the rival has higher service costs, it has weaker incentives to raid other firms' customers. Note also that, in this formulation, unit costs have the same effect on equilibrium prices as does the discount 6 necessary to get customers to switch suppliers.

Further insight into the consequences of varying costs is obtained by displaying the formulae for optimal customer recruitment levels, S_A^* and S_B^*. These are:

$$S_A^* = (KN, - \delta - (C_A - C_B))/2K \tag{5a}$$

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[13] Presumably all firms can buy advertising services in a common compehhve market

$$S_B^* = (KN_A - \delta - (C_B - C_A))/2K \qquad (5b)$$

Equations (5) illustrate an important and policy-relevant point regarding cost differences. The quantity S_A^*, e.g., represents the number of customers originally using seller B who are lured to seller **A** by a discount of δ below B's prices. If $C_A < C_B$, then more such customers are lured than if $C_A > C_B$. This is socially beneficial: firms with *higher* production costs are more vulnerable to losing customers to discounts, and this is precisely what one would wish, as it saves resources and goads higher cost firms into undertaking cost-saving measures. Both benefit society.

On balance, the simple mechanism described in Section III is seen to be robust to several complications in the analysis. This is unsurprising. Firms will **seek** to gain rivals' customers when it is profitable to do so. Advertising, of which telemarketing is an important part, is a primary mechanism used for this purpose. Any public initiative that increases the costs of this activity will lessen the extent of competition between firms, and it is quite likely that the result will be higher prices.

V. Conclusion

This report has examined the probable economic consequences on product prices of restrictions on telemarketing for those industries in which telemarketing serves as a means "raiding" the customer base of a rival. Telecommunications is a prominent example of such an industry, but there are others. By representing the initiation of a "do not call" program as a cost increase applicable to contacting a rival's customers, our simple, two-stage game theoretic model illustrates that the expected consequence of such restrictions is a price increase. In all cases examined, we find straightforward economic reasons to suspect that price increases are likely.

The usual economic logic favoring restrictions on telemarketing posits the existence of "externalities" created by such calls. Put simply, many consumers find such calls to be irritating, and that irritation is an economic cost that could be mitigated by restrictions.

The problem with the "externality view," however, is that it is incomplete. Advertising, which includes telemarketing, is not competitively neutral. In industries such as telecommunications, telemarketing appears responsible for

most customers switching between carriers in response to offered price reductions. Limitations on telemarketing will then in turn limit an important instrument for price competition. While many customers do not like to receive sales calls, all customers presumably do enjoy lower prices. Thus, limitations on telemarketing, even if the externality view is totally correct, could actually *harm* consumers whenever price increases outweigh the benefits of fewer sales calls. It is critical that both phenomena be considered in any policy discussion.

Technical Appendix

This section provides details of the analyses presented in the report. Relevant notation includes:

N_A = # customers initially assigned to firm A;

N_B = # customers initially assigned to firm B;

P_A = price charged by A;

P_B = price charged by B;

δ = discount necessary to induce a customer to switch suppliers;

K = effective customer contacts cost parameter.

Let unit costs of service be C_A and C_B, respectively. Initially, take $C_A = C_B = 0$, or else $C_A = C_B = \bar{c} > 0$ and P_A, P_A indicate prices net of $\bar{c}$. Each consumer buys one unit of service, either from their initial vendor, or else at a discount of 6 from their initial vendor's price if effectively contacted by a rival seller.

Let S_A, S_B be the numbers of effective contacts made by firms A and B, respectively. A contact is "effective" if, given the contact, the customer would switch suppliers if offered a discount of at least 6. The cost a firm bears for making Seffective contacts is $(K \cdot S^2)/2$, where $K > 0$ is a cost parameter. The convexity of this cost expression reflects heterogeneity among customers and short-run limitations on the ability of firms to effectively advertise.

The firms play a two-stage game of complete information. In stage 1, firms simultaneously and non-cooperatively select their prices P_A and P_B. Both firms learn these prices, and in Stage 2 simultaneously and non-cooperatively select their levels of effective contacts S_A and S_B. This is all common knowledge. Firms act to maximize profits. We seek a subgame perfect Nash equilibrium for prices and recruitment activities.

In Stage 2, prices are given, so firm iselects S_i to solve:

$$\max\left\{S_i(P_i - \delta) - (KS_i^2)/2\right\} \qquad \text{(A1)}$$

If $0 < S_i^* < N_j$, for $i = A, B$, then S_i^* solves:

$$S_i^* = (P_i - \delta)/K. \tag{A2}$$

These solutions are taken as given in the first stage of competition. It is apparent that both firms have dominant strategies in prices. In particular, firm iselects P_i to solve

$$\max\{(Ni - S_j^*)P_i + S_i^*(P_j - \delta) - (KS_i^*)/2\} \tag{A3}$$

Optimal prices P_i^*, $i = A$, B, are given by:

$$P_i^* = (KN_i + \delta)/2 \tag{A4}$$

Thus, $\partial P_i^*/\partial K > 0$.

When unit costs of service C_A and C_B differ, and are not both zero, we obtain the modified conditions:

$$P_i^* = (KN_i \bullet 6 + C_i + C,)/2 \tag{A4'}$$

We note that, if K is sufficiently small, then $S_i^* = N_j$ is conceivable. This unrealistic possibility is not further examined.

We turn now to an analysis with downward-sloping customer demands. Let the quantity of service purchased by a customer vary with price. We assume $Q = D$ - **p,** where Q is the number of units the customer buys, D is a known constant ($D > 0$), and p is the effective price. For simplicity, take $C_A = C_B = 0$. In this case. we have:

$$S_i^* = (D - (P_j - \delta))(P_j - \delta)/K \tag{A5}$$

for i = A, B. In the first stage, we find again that the firms have dominant strategies in prices, and the subgame perfect equilibrium prices must solve:

$$(D - 2P_i + 2\delta)(D - P_i)P_i/K + (N_i - S_i^*)(D - 2P_i) = 0 \tag{A6}$$

for i = A, B. For P_i^* to be a profit-maximizing choice, we require that the derivative of (A6) with respect to P_i be negative. Similarly, direct calculation establishes that the derivative of (A6) with respect to K is positive at equilibrium. Writing firm **i's** profits as π_i, we see that $\partial p_i^*/\partial K = -(\partial^2\pi_i/\partial P_i\partial K)/(\partial^2\pi_i/\partial P_i^2)$ where the numerator is negative and the denominator is negative, so that $\partial P_i^*/\partial K > 0$ as before.

Finally, we show that the particular functional form used for the costs of contacting customers may be generalized. Instead of assuming that his cost is given by $KS^2/2$, we adopt the general form $K\cdot T(S)$ where we assume $T'(0) = 0$ (to assure contacts occur), and $T'' > 0$ (convexity of costs). Again, an increase in K raises total and marginal costs of making contacts with rivals' customers.

Let optimal advertising be given by:

$$S_A^* = S_A^*(P_B, \delta, K) \tag{A7a}$$

$$S_B^* = S_B^*(P_B, \delta, K) \tag{A7b}$$

Simple calculus establishes that $\partial S_i^*/\partial P_j > 0$, $\partial S_i^*/\partial \delta < 0$, and $\partial S_i^*/\partial K < 0$. Moving again to the first (price) stage, we obtain the necessary conditions:

$$-(\partial S_B^*/\partial P_A)P_A + (N_A - S_B^*) = 0 \tag{A8a}$$

$$-(\partial S_A^*/\partial P_B)P_B + (N_B - S_A^*) = 0 \tag{A8b}$$

Noting that the Jacobean matrix $[\partial^2\pi_i/\partial P_i\partial P_j]$, where π_i is i's profit, has zero off-diagonal elements, and calculating the terms $\{\partial^2\pi_i/\partial P_i\partial K\}$, application of Cramer's Rule allows **us** to determine the sign of the derivatives $\partial P_A^*/\partial K$ and $\partial P_B^*/\partial K$. These are positive. For example,

$$\partial P_A^*/\partial K = (-2\partial S_B^*/\partial K(\partial 2T(S_A^*)/\partial S_A^*))/|J| = 0$$

where $J = [\partial^2\pi_i/\partial P_i\partial P_j]$ is the Jacobean, so that $|J| > 0$ at P_A^*, P_B^*. Thus, $\partial P_A^*/\partial K > 0$.

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Rules and Regulations Implementing the Telephone Consumer Protection Act of 1991	)	CG Docket No. 02-278
	)	CC Docket No. 92-90
	)	
	)	

DECLARATION OF RANDY HJCKS
ON BEHALF OF WORLDCOM, INC.

Based on my personal knowledge and on information learned in the course of my business duties, I, Randy Hick, declare as follows:

1. My name is Randy Hicks. I am employed by WorldCom, Inc. ("WorldCom") as the Director of Automation and Network Operations in the Operations group of WorldCom. In that position, I am responsible for providing Customer Self Service capabilities, Voice and Data network design/support and Call Center Telephony switching systems. I have participated in the development, testing and use of predictive dialers for telemarketing telephone services.

2. The purpose of my affidavit is to describe the operation and benefits of the predictive dialing equipment used by WorldCom

3. Predictive dialer is a software driven system that integrates with telephony switches and is designed to initiate the dialing of predetermined telephone numbers. The main purpose of a using a predictive dialing process is to enable *an* entity making numerous calls in an attempt to reach ''live'' persons to make the most efficient use of its resources. specifically the personnel handling the calls. The other important function

served by this system is that it can control the numbers that are called. An entity will only load the equipment with numbers it wants to call, thereby ensuring only those numbers are dialed by the system. MCI, for example, will only load numbers that have been run through a process that excludes numbers that MCI should not be calling, such as numbers listed on MCI's company-specific do-not-call list.

4. The predictive dialing system has a substantial positive impact on the preservation of callers' time and productivity because only one out of every seven to nine dialed calls results in a connection with a person. The other calls are not answered or reach busy signals, recorded messages, voice mail, answering machines, or other non-"live" responses. Answering machines, in particular, account for most of these nonproductive calls, being responsible for 35% to 40% of such calls. By avoiding the 86% to 89% of all outbound dialing that does not reach a person, an entity can be seven to nine times more successful at reaching prospects than it would be without the use of predictive dialers. Consequently, predictive dialers are a valuable cost-effective tool for pollsters, political campaigners, telemarketers, and charitable organizations. MCI uses predictive dialers in all of its telemarketing call centers, which are located in various states. Calls to consumers nationwide may be made from any of the call centers in these states, depending upon workload and availability.

5. The predictive dialing process employs two machines, a predictive dialer engine and an automatic call distributor (ACD). The predictive engine provides technology for self-adjusting, adaptive algorithms that minimize agent wait times and prospect abandonment rates. It is programmed to send telephone numbers contained in a database to the ACD at a certain rate. The ACD dials the telephone numbers and uses

answer detection software that is designed to determine call disposition. The answer detection software is designed by the manufacturer to detect sound energy within the range of human voice frequency and duration. If the call is determined to be ''live,'' the ACD instantly sends the call to a sales representative. If no representative is available the ACD places the called party's circuit in queue to be served by the nest available sales representative.

6. The answering machine detection (AMD) component of the answering detection software relics on the observations of two timers. The first one ("voice timer") begins at the time of voice energy detection; the second one ("pause timer") begins with a pause in speech that generally follows a greeting. The AMD timers determine the maximum time for answer detection of a circuit on which voice energy has been detected. It may be set based upon the client's experience with how long it takes a person to state his/her greeting. For example, excessively long greetings are probably message machine greetings. Once the voice timer's time limit has been exceeded, the **ACD** will disconnect the circuit. The voice timer will run for the programmed length of time unless one of two things happens. One would be the detection of a pause of the required duration by the pause timer. When this occurs, it is presumed to be a "live" person's voice and the circuit is routed to an agent or queue if no agents are available. The other circumstance could be a hang up by the called recipient.

7. The system has the potential of reaching more "live" called parties than the number of available agents to service the calls. The ACD will hold the call in queue for a predetermined length of time (a few seconds), and if there are no representative available within that period, the ACD will terminate the call and the called party will be

disconnected. This is what is termed an abandoned call. The abandonment rate is determined by the number of abandoned calls versus the total number of ''live'' person's voices reached.

8. MCI, and any responsible user of the predictive dialing system, ensures the lowest number of abandoned calls feasible, while still obtaining the benefits of the system. MCI follows tbe Direct Marketing Association's guidelines that the rate be as close to 0% as possible, not to exceed 5%. MCI performed numerous studies in a controlled environment to determine the feasibility, and impact on productivity, of reducing its current abandonment rates of 3%-5% to a 1% abandonment rate. The testing indicated that in order to reduce the abandonment rate to this level, the predictive dialing system had to be aborted. This meant moving to an auto dial mode, which reduced productivity by approximately 50%. Moreover, the tests determined that the 1% goal was not obtainable even in the auto dial mode. MCI has determined that its 3% to 5% is the lowest feasible rate possible in order to obtain the productivity benefits of predictive dialers.

I declare that the foregoing is true and correct to the best of my information **and** belief. This concludes my declaration

Executed on December 6, 2002

Randy Hicks